



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/688,842	10/17/2003	Hec Wong	P05718 (NATI15-05718)	9434

23990 7590 02/27/2007
DOCKET CLERK
P.O. DRAWER 800889
DALLAS, TX 75380

EXAMINER

NGUYEN, THUAN T

ART UNIT	PAPER NUMBER
----------	--------------

2618

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/27/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/688,842

Applicant(s)

HEE WONG

Examiner

THUAN T. NGUYEN

Art Unit

2618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2,6-10,14 and 15 is/are rejected.
- 7) ☒ Claim(s) 3-5, 11-13, 16-20 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed on 05/30/2006 have been fully considered but they are not persuasive. After carefully reviewed the applicant's arguments versus the specifications, the features of claims 1, 9, and 15 as argued by the applicant, i.e., the step of "switching mixing input signals with harmonic gating suppression of harmonic responses to the switching mixing", is simply not supported and enabled by the specifications with any corresponding description.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-20 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The feature of "switching mixing input signals with harmonic gating suppression of harmonic responses to the switching mixing" critical or essential to the practice of the invention, but not included in the specifications is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). The concerned issue is slightly discussed in the summary section 0004, but then after that, there were no disclosure related to this summary paragraph for any one of ordinary skill in the art to understand how, when or what occurs the step of "switching mixing input signals with harmonic gating suppression of harmonic responses to the switching mixing" is performed suitable to the describing circuitry. In another section 0019, there is a slightly touch on "harmonic rejection" but in the (other) related application.

Claim Rejections - 35 USC 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-2, 6-10, and 14-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Kuiri et al. (U.S. Patent Pub No. 2004/0142674 A1).

Regarding claim 1, Kuiri discloses a mixing circuit comprising one or more switching devices performing switching mixing of input signals with harmonic gating suppression of harmonic responses to the switching mixing (Fig. 3, page 1/par. 0011 and page 2/par. 0024 for a switching mixer circuitry of input signals with more than one switching device); and a capacitive load coupled to the one or more switching devices and forming a low pass filter operating on an output of the one or more switching devices (page 1/par. 0011 and Fig. 3/LPF 5A for capacitive load on the output of the one or more switching devices SW1 and SW2).

As for claim 2, Kuiri discloses this feature as Kuiri's circuitry including more than two differential transistor pairs (T3, T4, T5, T6) controlled by local oscillator signals (LO) to perform the switching mixing and harmonic gating suppression (Fig. 4 and pages 2-3/par. 0028).

Art Unit: 2618

As for claim 6, Kuiri teaches this feature since the objective of the direct conversion receiver, after the switching and mixing stage as noted above, is to obtain baseband output signal (page 1/par. 0002).

As for claim 7, Kuiri also teaches this feature as low noise amplifier and at least one filter are included in the mixing circuitry of the receiver (Fig. 2A and page 1/par. 0005 for LNA and filter in the prior art of the direct conversion receiver).

For claim 8, Kuiri further discloses a communication including the mixing circuit as disclosed earlier, further comprising a transmitter, a receiver and the receiver receives a signal from the transmitter and the receiver operates on the signal received from the transmitter (Fig. 5 for an overview of a communication system, mobile station 100 includes receiver 220 within direct conversion receiver 1 for receiving signals transmitted from serving cell BTS or base transceiver station 50 of BSC 40, and page 3/par. 0033).

As for claims 9-10 and 14, these method claims with same limitations addressed earlier are rejected for the reasons given in the scope of claims 1-2 and 6, respectively, as discussed above.

As for claim 15, this claim with similar limitations addressed earlier are rejected for the reasons given in the scope of claims 1-2, with a mixing stage receiving a differential input current representative of the input signals is taught by Kuiri (Fig. 3 again and page 2/par. 0024-0026 for mixer 4 with differential input currents for input signals).

Allowable Subject Matter

6. Claims 3 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims AND to overcome of the rejection 112-1st paragraph above.

7. The following is a statement of reasons for the indication of allowable subject matter:

The closest prior art of Kuiri does not further disclose the mixing circuit (of claims 1 and 2) AND further includes the step of the local oscillator signals operate on switching between two differential transistor pairs as indicated for which period to be on and off.

8. Claims 4-5, 12-13, and 16-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims AND to overcome of the rejection 112-1st paragraph above.

9. The closest prior art of Kuiri does not further disclose the mixing circuit (of claims 1 and 2) AND further includes the step of the operation of a network of switched load capacitors on how to sample an output voltage and transfer charge as indicated in claims 4, 12, and the switching pattern as in claim 16.

Conclusion

10. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

11. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to the New Central Fax number:

(571) 273-8300, (for Technology Center 2600 only)

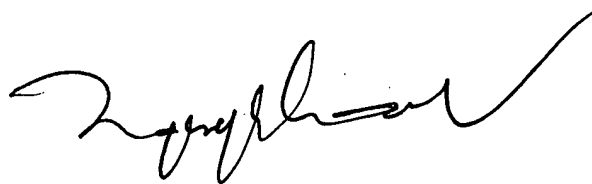
Hand deliveries must be made to Customer Service Window,

Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

Art Unit: 2618

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony Thuan Nguyen whose telephone number is (571) 272-7895. The examiner can normally be reached on Monday-Friday from 9:30 AM to 7:00 PM.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Tony T. Nguyen', with a stylized flourish at the end.

Tony T. Nguyen
Primary Examiner
Art Unit 2618

TTN
February 13, 2007